

## CHAPTER III

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# ADMINISTRATION'S PLANS FOR NAVAL COMBAT AIRCRAFT

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Because of the needs associated with the forward offensive strategy planned by the Administration, the Navy must meet the requirements of an expanded force structure and improve its aircraft capabilities through modernization. Accordingly, the Administration plans to buy 1,085 naval combat aircraft over the next five years.

Under those plans, spending in the Navy's aircraft account would grow at an average rate of 7 percent a year in real terms between 1987 and 1992. Even with this growth, however, the Navy's aircraft inventories would be short of requirements by 176 aircraft in the 1990s. The resulting shortfall (that is, requirements minus inventory) could be substantially larger under alternate but plausible assumptions about how long aircraft can remain in service. Any attempt to offset these shortfalls by buying more aircraft would substantially increase the growth in costs.

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## AIRCRAFT INVENTORIES

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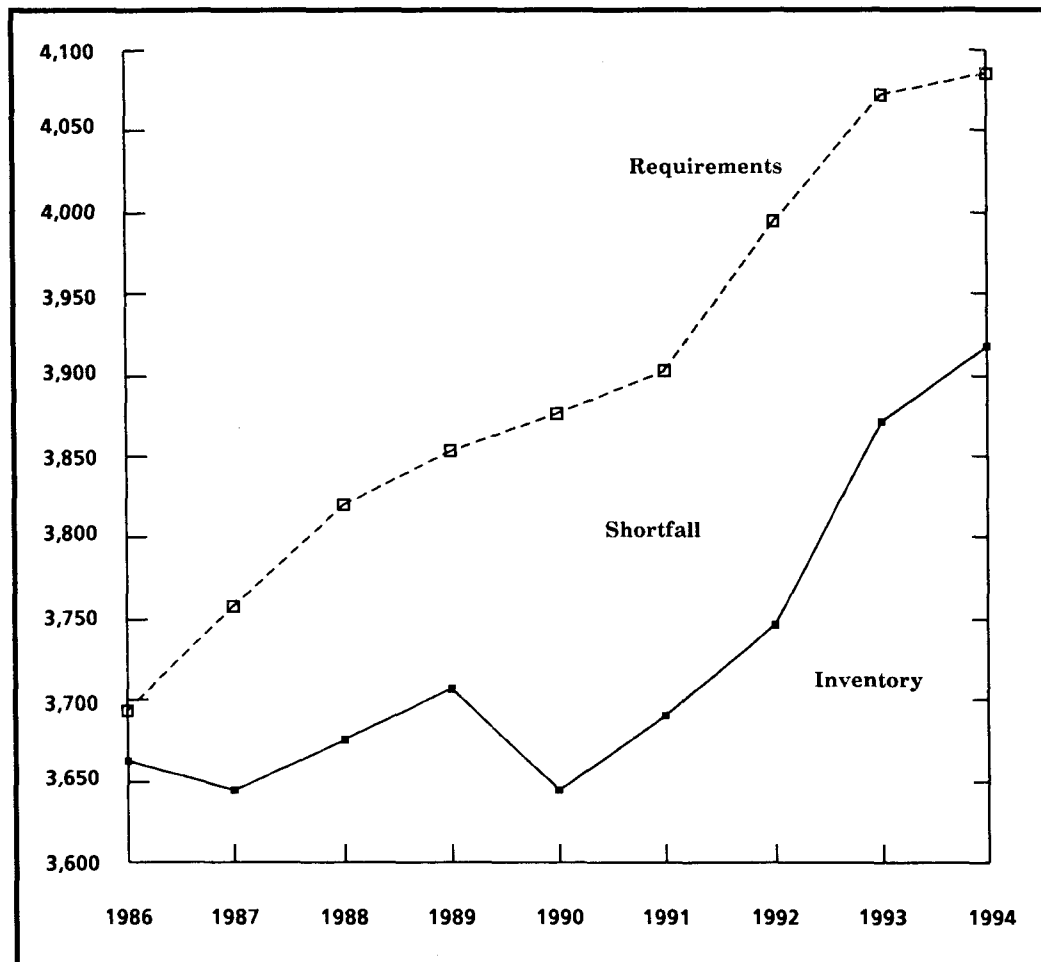
Inventories of naval aircraft to meet the needs of combat forces total 3,644 aircraft in 1987 and will increase to about 3,920 by 1994, the first year when all aircraft purchased over the next five years will have entered the fleet (see Figure 2). These results assume the Navy's five-year plan for aircraft procurement (see Table 2) and a variety of

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NOTE: The detailed assumptions used in this analysis to estimate requirements and inventories were provided to CBO in early 1987 by the Navy as being consistent with the President's budget for fiscal years 1988 and 1989. The Navy has published a new Naval Aviation Plan this fall. Apparently the expected aircraft procurement has not changed in this plan, but it appears that the Navy may have changed these requirements (details of the changes are classified). Hence, the results of this analysis could be different if CBO were able to reflect the assumptions associated with the new plan.

assumptions supplied by the Navy--for example, how long planes are expected to remain in service and how many will crash each year during peacetime training. Aircraft considered in this study include all those purchased in the combat budget activity of the Navy's aircraft procurement account.

FIGURE 2. NUMBER OF NAVAL COMBAT AIRCRAFT:  
REQUIREMENTS, INVENTORY, AND SHORTFALL



SOURCE: Congressional Budget Office estimates using data from the Department of the Navy.

NOTE: Shortfall = requirements minus inventory.

This growing inventory of naval aircraft will increase slightly in average age. The inventory averages 12.2 years of age in 1987; under the Administration's plans, that average would increase to 12.9 years by 1994 (see Figure 3). However, the fleet of fighter and attack aircraft, whose stressful missions may make age a more important factor, will be younger than it is today--10.6 years in 1987 compared with 10.3 years in 1994.

TABLE 2. PLANNED PROCUREMENT OF NAVAL COMBAT AIRCRAFT (Number of aircraft, by fiscal year)

Aircraft	1987 Approved	1988	1989	1990	1991	1992
A-6E/F	11	12	18	24	24	36
EA-6E	12	6	9	9	9	9
AV-8B	42	32	32	15	15	15
F-14A/D	15	12	12	19	30	42
F/A-18	84	84	72	72	72	72
CH-53E	14	14	14	4	0	0
V-22	0	0	0	12	45	61
AH-1W	0	22	12	0	0	0
SH-60B	17	6	6	6	12	12
SH-60F	7	18	18	18	12	12
P-3C/G	9	0	0	4	25	25
E-2C	10	6	6	6	6	6
SH-2F	6	0	0	0	0	0
EXCOMP <u>a/</u>	0	8	8	0	0	0
Total, Excluding Modifications <u>b/</u>	227	212	199	182	232	260
Total, Including Modifications	227	220	207	189	250	290

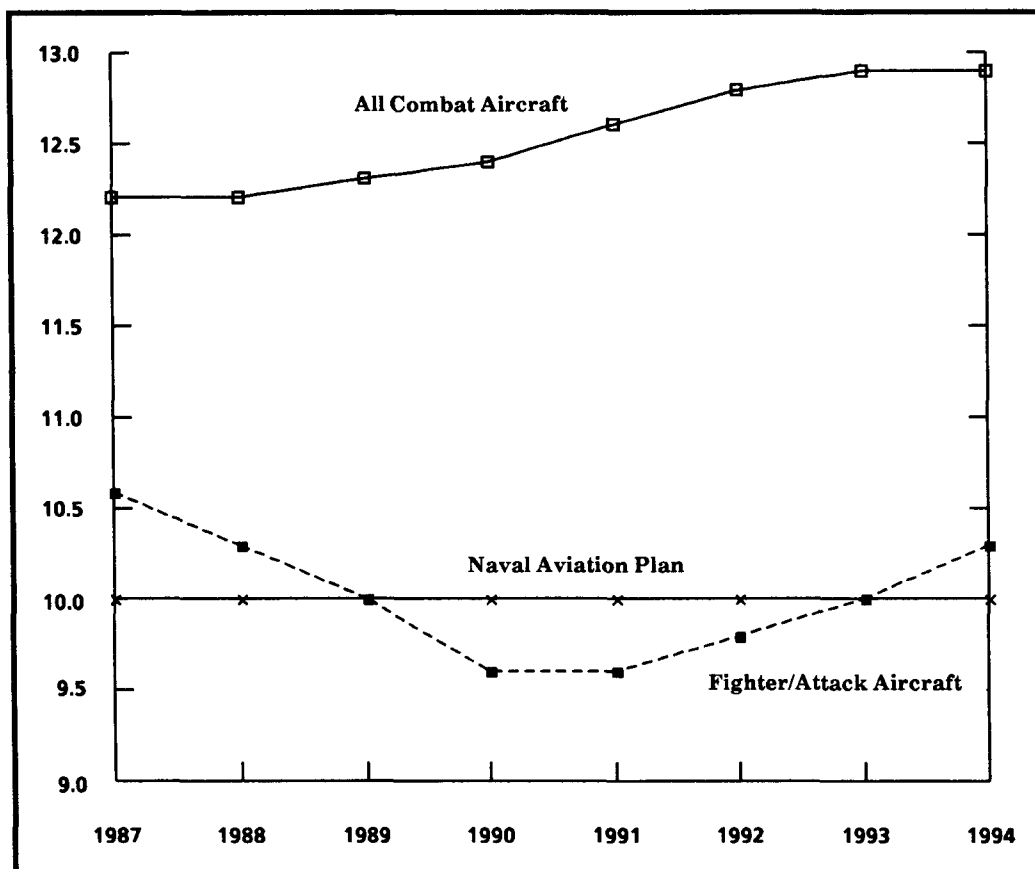
SOURCE: Congressional Budget Office presentation of data submitted in the President's budget for fiscal years 1988 and 1989.

- a. EXCOMP is a program to solicit bids for a new electronic support aircraft. After the budget was submitted, the Navy apparently decided to modify several S-3 aircraft for electronic support.
- b. Annual procurement of new F-14s totals only 12 in each of the five years of the defense plan. The rest of the planes listed in the F-14 line and all of the planes listed under EXCOMP are modifications to existing aircraft and are counted in the "Total, Including Modifications" line below.

While encouraging, these five-year results for fighter and attack aircraft mask less reassuring trends. Between 1987 and 1990, the average age of fighter and attack aircraft decreases because of large procurements that occurred between 1983 and 1987 and because of retirements of older aircraft (see Figure 4 for historical procurement of fighter and attack aircraft). By the 1990s, deliveries of fighter and attack aircraft will be reduced and retirements will be substantially complete; hence, average age will begin to rise.

Although the Navy has not established a goal for average age for combat aircraft, the last three Naval Aviation Plans--a document published annually by the Navy to describe its aviation require-

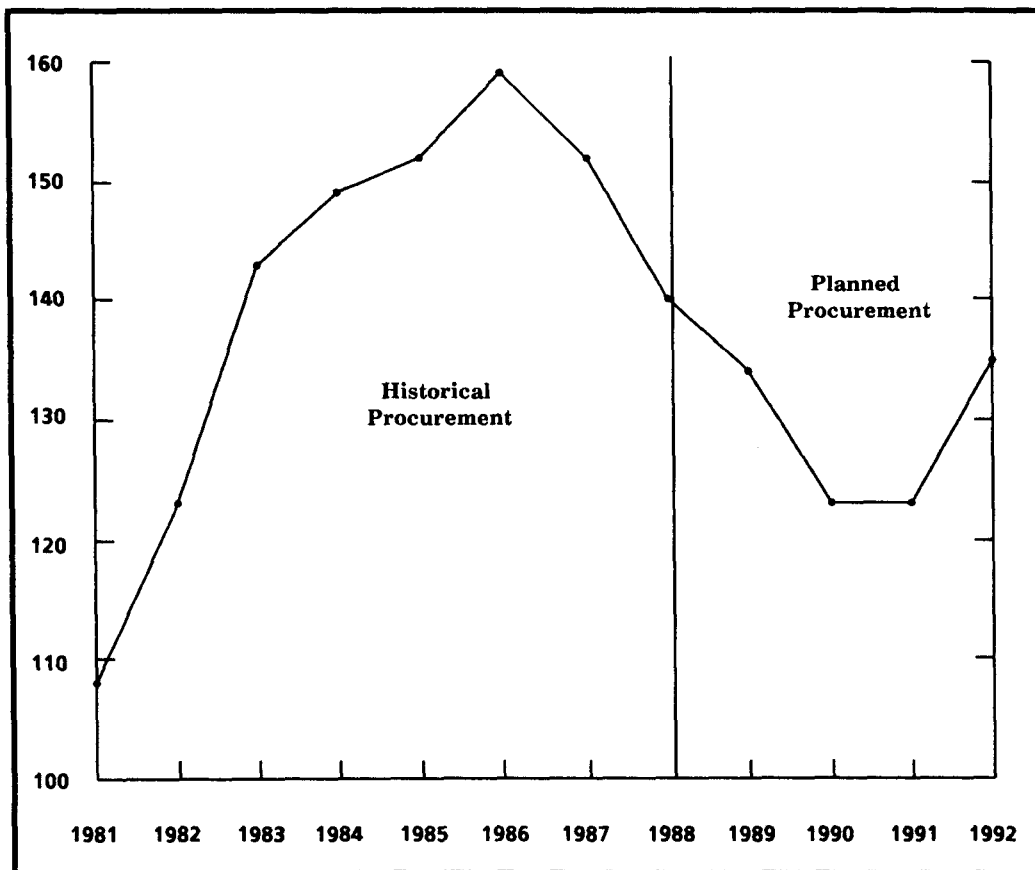
FIGURE 3. AVERAGE AGE OF NAVAL COMBAT AIRCRAFT (In years)



SOURCE: Congressional Budget Office estimates using data from the Department of the Navy.

ments--have typically assumed a 20-year service life for combat aircraft when computing annual procurement. If planes with a 20-year service life are evenly distributed in age, the average age of the fleet would be 10 years. By this measure, today's fleet is about 22 percent older than the Navy's goal. This goal of a 10-year average age appears to have been relaxed somewhat; estimates would range from 11.5 to 13.0 years based on the Navy's current assumptions about retirement. On the other hand, the Navy once argued that because of the extraordinary stress its planes undergo, and because of corrosion

FIGURE 4. NUMBER OF FIGHTER/ATTACK AIRCRAFT PROCURED, FISCAL YEARS 1981-1992



SOURCE: Congressional Budget Office using data from Department of the Navy, *Highlights of the Department of the Navy Budget*, consecutive years.

from salt water, at least its fighter/attack aircraft should retire at 15 years of age--an average age of 7.5 years.<sup>1/</sup>

What is the importance of average age? In the past, the Navy has argued that the aging of its aircraft fleet is important because older planes are more costly to operate and maintain. Older planes also suffer from greater downtime for repair and modification, which adversely affects training. (There is, however, little data on repair times and operating costs of Navy aircraft. Thus the impact of continued aging cannot be quantified.) The Navy also argues that the age of its aircraft is an important if rough measure of its ability to meet an increasingly capable enemy threat. By this measure, the Navy inventory is becoming slightly less capable.

#### REQUIREMENTS FOR NAVAL AIRCRAFT

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Naval combat aircraft must fulfill a variety of needs. Most aircraft are deployed in operating forces, including:

- o Navy carrier-based air wings, 14 active and 2 reserve (a wing contains about 86 aircraft);
- o Navy land-based antisubmarine warfare (ASW) squadrons, 26 active and 13 reserve (a squadron typically contains 9 aircraft);
- o Navy ASW forces aboard surface combatants, eventually totaling about 250 aircraft; and
- o Marine Corps air wings, 3 active and 1 reserve (with an average of about 310 planes each).

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1. The simple metric of dividing desired retirement age by two has been used by both the Navy and the Air Force to describe how many planes need to be bought annually to maintain a particular force structure. This method assumes, of course, that planes are evenly distributed in age, an assumption that is never met.

In addition to aircraft needed in operating units, aircraft are needed for various support activities, including:

- o The Navy's pilot-training squadrons;
- o Replacements for aircraft in repair; and
- o Testing of new tactics and equipment.

Requirements depend not only on the number of units but also on their configuration--that is, the number of each type of aircraft in the wing. The Navy bases requirements on four types of wing configurations that are used for planning--the Midway, the Kennedy, the standard, and the notional (see Table 3). Wings might never actually be deployed with these exact configurations, since the types of planes placed in a deploying unit will depend on the specific mission. Nonetheless, these theoretical configurations, supplied by the Navy, are needed for planning. The "notional" configuration was the result of a long-term Navy study to determine the optimal configuration for its air wings. It will eventually replace all of the "standard" air wings. As the table shows, the notional wing has the same total number of aircraft as its predecessor, but it has more A-6 aircraft, fewer F-14s and F/A-18s, as well as a small increase in electronic warfare aircraft.

These various assumptions lead to gradually increasing requirements (see Figure 2). Requirements rise from 3,820 aircraft in 1988 to 4,085 aircraft in 1994. The increase stems largely from fleshing out the Navy's carrier air wings, from increases in the Marine Corps' amphibious lift forces, and from modest increases in antisubmarine and electronic warfare forces.<sup>2/</sup>

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2. Some of the difference between the Navy's 1994 requirement of 4,085 aircraft and today's requirement of 3,820 might be described as current unmet requirements. For example, even though the Navy's force structure would indicate that there are two reserve wings, many reserve squadrons do not have complements equal to active wings. By 1994, the Navy will have increased the size of these squadrons to more closely resemble active squadrons. Authorizations for Marine Corps amphibious lift squadrons present a similar situation. Squadron authorizations were higher in the 1970s than they are now. According to the Marine Corps, this result occurs more because the service lacks planes to fill the squadrons than because the threat has decreased. Hence, the increase for the amphibious assault mission--about 100 planes--during the period from 1987 to 1994 is really more a return to past force levels.

TABLE 3. COMPOSITION OF NAVAL AIR WINGS

Aircraft	Air Wing Configurations (Number of aircraft)			
	Midway <u>a/</u>	Kennedy <u>b/</u>	Standard	Notional
F-4 and F-14	0	24	24	20
A-7 and F/A-18	36	0	24	20
A-6 and KA-6	16	28	14	20
S-3	0	10	10	10
SH-3 and SH-60F	6	8	6	6
EA-6	4	5	4	5
E-2	<u>4</u>	<u>5</u>	<u>4</u>	<u>5</u>
Total	66	80	86	86

SOURCE: Congressional Budget Office using wing configurations supplied by the Department of the Navy.

- a. Two carriers, the Midway and the Coral Sea, have this kind of air wing.
- b. Two carriers, the Kennedy and the Ranger, have this kind of air wing.

The current level of requirements, and the gradual increase, reflect the Navy's estimates of aircraft needed to meet peacetime needs and to prevail in the event of war. As the Soviet Union develops increasingly capable systems and increases the size of its forces, the Navy intends its forces to do the same. The Navy is particularly concerned about the dramatic quieting of Soviet submarines, Soviet advances in the area of land-based aviation, and Soviet plans to field a conventional aircraft carrier in the early 1990s.<sup>3/</sup> The forward offensive strategy becomes much more difficult as, for example, the stand-off ranges--the distances from which Soviet bombers can fire missiles--increase. Carrying out that strategy will become even more

3. Problems with expense and complexity could delay the Soviet Union's fielding of a conventional aircraft carrier. Indeed, recent press reports seem to indicate that the Soviet Union may have delayed or even abandoned those plans (Robert C. Toth, "Soviets Seen Cutting Navy's Global Reach," *Los Angeles Times*, October 22, 1987). Moreover, the arguments about the vulnerability and expense of U.S. carriers discussed in Chapter II would also apply to Soviet carriers. If one believes that the Soviet Union would be facing these problems, then U.S. concerns about capability might be reduced even if Soviet plans proceed as DoD projects.

difficult if the Soviet Union develops conventional aircraft carriers that can bring its aircraft closer to U.S. carriers. The amount of time for accomplishing Marine amphibious assaults shortens as Soviet command, control, and communications capabilities improve. And larger, more capable antisubmarine forces are needed to detect quieter Soviet submarines.

### AIRCRAFT SHORTFALLS

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Comparing the 1994 total for requirements with the 1994 total for inventories yields a shortfall of 226 planes of eight aircraft types and an overage of 50 planes of six aircraft types. Thus, the net shortfall for Navy planes in 1994 will total 176.4/ Table 4 shows these shortfalls and overages by aircraft type.

The main reason for shortfalls of combat aircraft is the Navy's decision to buy fewer planes. Each year the Navy supplies the Congress with a five-year plan for aircraft procurement. The latest five-year plan (1988-1992) buys 440 fewer aircraft in the 1988-1991 period than did last year's plan (the years 1988 to 1991 represent the common four years of the two plans). The latest Navy plan generally has not cut back on the total number of aircraft types that the Navy eventually plans to buy. Rather, this year's plan "stretches out" production by cutting back on the rate of annual procurement. In addition, both plans have substantial "out-year loading"; that is, the numbers of planes procured toward the end of the plan and further away from the budget year are larger.

This shortfall will probably continue unless changes are made in current policies. The Navy estimates that, over the long run, it needs to buy about 330 aircraft a year to meet all its planned requirements for Navy and Marine Corps aircraft while avoiding further increases in average age of the fleet. Figure 5 shows that the latest five-year

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4. Net shortfalls are used throughout the paper because they represent to some extent the fungibility of aircraft procurement dollars--that is, the Navy could take funds from planes that are in oversupply and apply them to planes where there are shortfalls. These net shortfalls may, however, underestimate the problem, since a number of the planes listed here perform more than one mission.

procurement plan falls well short of this goal, averaging 247 aircraft a year. In contrast, last year's plan averaged 357 aircraft each year, reflecting the Navy's view at that time that extra planes were needed to fill out an increasing force and to lower the average age of the force.

### Implications of a Shortfall

The size of a shortfall is not itself a complete indicator of defense capability. The United States could reduce shortfalls by eliminating aircraft carriers, but that would decrease overall defense capability rather than increase it. Shortfalls are, however, a reasonable measure

TABLE 4. SHORTFALLS (OVERAGES) OF NAVAL COMBAT AIRCRAFT IN 1994

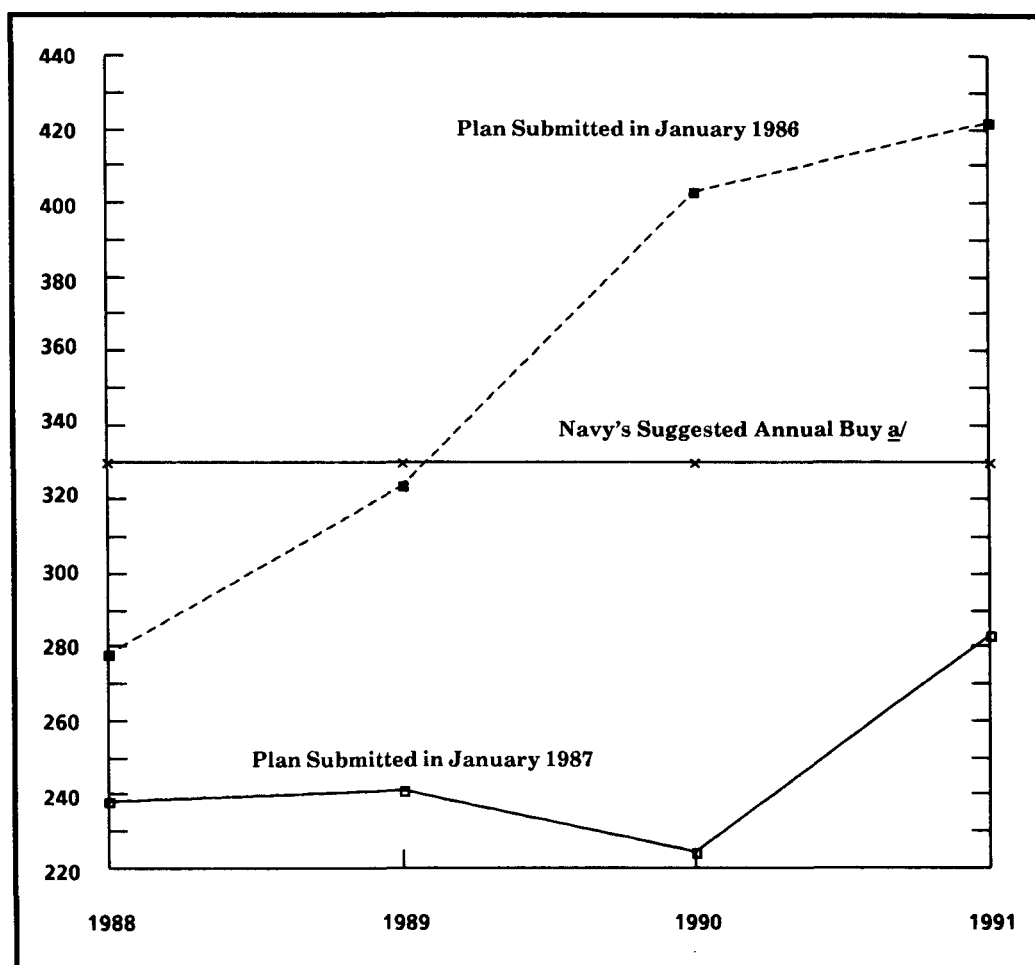
Aircraft	Quantity Short (Over)
F-14	12
F/A-18	18
A-6	69
AV-8	(17)
EA-6	30
E-2	(7)
S-3A	44
SH-60B	4
SH-60F	(1)
P-3	37
SH-2	12
CH-53	(17)
CH-46 and V-22	(4)
AH-1	(4)
Net Shortfall	176

SOURCE: Congressional Budget Office estimates based on data from the Department of the Navy.

of the degree to which expensive aircraft carriers are being fully utilized.

To what extent does a shortfall of 176 aircraft suggest underutilization? Some of the shortfall may simply reflect limits

FIGURE 5. NAVY'S PLANS FOR AIRCRAFT PROCUREMENT IN THE FOUR-YEAR PERIOD (1988-1991) COMMON TO THE LAST TWO FIVE-YEAR PLANS



SOURCE: Congressional Budget Office using data from the President's budgets for fiscal year 1987 and for fiscal years 1988 and 1989; and from the Department of the Navy's Naval Aviation Plan, 1986.

- a. The Navy has testified that it needs to buy 330 aircraft annually to meet its force requirements and keep its aircraft at a constant average age.

associated with the size of aircraft carriers, which under some assumptions could not accommodate all the aircraft the Navy says it requires. The largest aircraft carriers (of the Nimitz class) can each accommodate 156 aircraft equivalent in size to the A-7E (the Navy's smallest fixed-wing carrier-based aircraft) if they fill the available aircraft parking space except for landing areas. Realistically, however, room must be left to move and service aircraft. A recent Navy study argued that a feasible loading would range from 75 percent to 85 percent of the maximum.<sup>5/</sup> At a density of 75 percent, a Nimitz-class carrier could handle 117 aircraft equivalent to the A-7E, but the notional air wing used in deriving requirements contains 125 A-7E equivalents, as shown below.<sup>6/</sup>

Aircraft	Number of Aircraft	Space Required (In A-7E equivalents)	
		Per Plane	Total
F-14	20	1.56	31.2
F/A-18	20	1.18	23.6
A-6	20	1.41	28.2
S-3	10	1.49	14.9
SH-60F	6	.60	3.6
EA-6	5	1.44	7.2
E-2	<u>5</u>	1.97	<u>9.85</u>
	86		118.5
Ground Support Equipment			<u>6.5</u>
Total			125.1

Considering carriers of various sizes in the Navy inventory, and assuming a density of 75 percent, requirements could contain 180

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5. Department of the Navy, "Carrier Air Wing Composition Study" (Final Report, December 1984), pp. 4-5, 4-6.
  6. Congressional Budget Office estimates from data supplied by the Department of the Navy.

more aircraft than can fit on the carriers.<sup>7/</sup> If requirements were reduced by 180 aircraft, there would be no shortfall in 1994.

On the other hand, all of the required planes could be accommodated at a density of 85 percent, though wings for smaller carriers would be smaller than the notional wing. In addition, the Navy would expect to use any "excess" planes that could not be deployed in peacetime to replace aircraft lost in war; so, even assuming the lower figure of 75 percent, requirements may be valid.

Apart from these limits on available deck space, the Navy can presumably accommodate some level of shortfall, as it is doing today. Moreover, it can probably do so in peacetime without deploying aircraft carriers, squadrons, or other units with fewer than their full complement of aircraft. Table 5 shows categories of requirements in 1994 for one type of aircraft (the A-6). About 67 percent of total required aircraft would be deployed or preparing to be deployed, and only about a third of those would actually be deployed (see note to Table 5 for the formula used to determine aircraft requirements). The remaining requirements are needed to keep combat squadrons equipped with planes while some are being repaired and modified (15 percent for the "pipeline"), testing new weapons and tactics (2 percent), and providing training for pilots who have never flown combat aircraft or who have not flown recently (15 percent). The Navy indicates that needs for deployed units can be met by removing planes from squadrons that have just returned from deployment and giving them to squadrons that are about to deploy (a technique known as cross-decking). The Navy also says that, at least temporarily, it can reduce the amount of time planes spend in routine maintenance or reduce planned modifications, thus freeing some aircraft in the pipeline for duty on deploying units.

These various accommodations, however, may reduce defense capabilities, particularly in wartime. Cross-decking of aircraft means they fly more in peacetime and thus age faster; indeed, cross-decking

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7. This figure assumes eight "notional" air wings (described above) and three standard wings. The Navy is currently making the transition from standard to notional wings, but three standard wings will remain in the fleet in 1994. The remaining carriers contain either Midway or Kennedy wing configurations.

TABLE 5. CATEGORIES OF AIRCRAFT REQUIREMENTS  
FOR THE A-6 IN 1994

Category of Requirement	Number of Planes	As Percent of Total
Deploying or Preparing to Deploy <u>a/</u>	352 <u>b/</u>	67
Maintenance and Modification ("Pipeline")	80	15
Additional Requirements		
Training squadrons for pilots with no recent flight experience in combat aircraft (Fleet Replenishment Squadrons)	81	15
Support of research and develop- ment and other miscellaneous requirements (RDT&E)	<u>12</u>	<u>2</u>
Total Requirements	525	100

SOURCE: Congressional Budget Office estimates based on data from the Department of the Navy.

NOTE: The formula widely used in the Defense Department to determine aircraft requirements is:

$$\text{Requirement} = (\text{number of squadrons} \times \text{number of aircraft}) + \text{training requirement} + \text{support for tactics and development (RDT\&E)} + \text{maintenance requirements.}$$

Each service uses its own percentages. The Navy, for example, when determining total aircraft requirements, uses the following percentages:

$$\begin{aligned} \text{Training} &= 25 \text{ percent of primary aircraft authorization (PAA)} \\ \text{RDT\&E} &= 3 \text{ percent of PAA} + \text{training} \\ \text{Backup} &= 15 \text{ percent of PAA} + \text{training} + \text{RDT\&E} \end{aligned}$$

Each type of aircraft is assigned specific percentages to be used in this formula when determining requirements for a particular type of aircraft. Thus, the percentages shown in this table reflect the percentages for the A-6.

- a. Includes aircraft deployed, just back from deployment, or in workup for next deployment (including squadrons coming up to full strength in personnel and squadrons at full strength).
- b. Includes requirements for the Marine Corps and the Navy Reserve.

has been vigorously opposed by the Navy in the past. Reducing time in routine maintenance may also make planes wear out faster, and reducing the time for modifications decreases the Navy's ability to offset technological obsolescence by upgrading older planes to enhance their capabilities. Perhaps most important, in wartime the Navy would want to deploy immediately many units that, in peacetime, are in workup for deployment. Shortfalls that can be accommodated in peacetime may lead to units being deployed in wartime without all their assigned aircraft. Shortfalls would also mean that fewer spare planes would be available to replace aircraft damaged in combat.

Thus, aircraft shortfalls are best interpreted as exacerbating problems of aging and maintenance in peacetime and as suggesting underutilization of an expensive asset, and hence reduced capability, in wartime.

#### Larger Shortfalls Possible

Shortfalls of naval aircraft could be much larger, and thus presumably much less manageable, under different assumptions about how long aircraft can remain in service. The shortfalls above reflect aircraft retirement plans that the Navy provided the Congressional Budget Office (CBO). For the group of aircraft discussed here, these "retirement ages," as the Navy calls them, would indicate that the Navy expects the average aircraft to remain in service about 26 years (see Table 6). Earlier the Navy provided CBO with "service life" estimates that assumed shorter time in service, averaging 23 years. (Both estimates exceed the 20-year figure used in the Naval Aviation Plan, and average ages of fighter/attack aircraft exceed the 15-year figure presented in earlier Navy estimates.)

A different picture from that discussed above emerges if service lives are used. By 1994, shortfalls under the Navy's assumptions of service life would total about 592 aircraft, or about 17 percent of the total inventory. Shortfalls of this magnitude would exceed the entire number of aircraft assumed to be in repair and would presumably greatly exceed the shortfall that the Navy could accommodate without significant underutilization of aircraft carriers in peacetime and wartime.

Which are the right ages to assume? As discussed earlier, the Navy has argued that older planes run the risk of obsolescence in the face of increasing threats, are more expensive and less efficient to operate, and are expensive to modify. The shorter service lives would seem to reflect these concerns and, indeed, may be evidence of

TABLE 6. NAVY ESTIMATES FOR AIRCRAFT RETIREMENT AGES

	Navy Estimates (In years)	
	Retirement Age <u>a/</u>	Service Life <u>b/</u>
F-14A	27	18
F/A-18	16	15
F-4	19	19
A-7E	17	17
A-6	32	23
AV-8B	15	15
AV-8A and AV-8C	13	13
A-4	33	32
EA-6	37	20
E-2	21	17
S-3A	24	24
SH-3 and SH-60F	29	23
P-3	30	30
SH-60B	22	22
SH-2F	34	24
CH-53	28	28
CH-46E and V-22	33	33
AH-1J, AH-1T, AH-1W	30	30
Weighted Average <u>c/</u>	26	23

SOURCE: Congressional Budget Office estimates of retirement ages and service lives supplied by the Department of the Navy, using weighted average in some cases.

- a. Supplied by the Navy in March 1987.
- b. Supplied by the Navy in February 1987.
- c. Ages weighted by number of aircraft in the 1987 inventory.

problems associated with the aging of the fleet. In 1985 about 60 percent of the A-6 fleet was grounded or could only fly on a restricted basis because of problems with wing fatigue that may be related to aging. Moreover, planes now being retired--F-4s and A-7s--appear to have had lives more consistent with the 23-year plans than the longer ones (though the Navy is retiring some A-7s with service life remaining). Finally, last year's procurement plans appeared to assume the shorter service lives, since the older retirement ages yield an overage of 217 aircraft, if the deliveries associated with last year's plan are assumed.

On the other hand, aircraft can be modified to extend their service lives almost back to the level of new aircraft. Indeed, the Navy has such programs for the A-6 and the F-14--programs that are apparently not reflected in the shorter service lives averaging 23 years but are reflected in the longer retirement ages averaging 26 years. Moreover, even new planes, like the F/A-18, have been grounded in the past for unanticipated problems with structural fatigue. Thus, the current grounding of the A-6 may be related more to the rigors of flight and the difficulties of estimating structural fatigue than to the age of the plane.

What is clear is that assumptions about age of aircraft at retirement critically affect the size of future shortfalls. The Navy will not know for sure if the longer retirement ages are acceptable until time passes and the condition of aircraft at various ages can actually be assessed. In the meantime, the risk of substantially larger shortfalls cannot be ignored.

### AFFORDABILITY OF CURRENT PLANS

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Under present plans, funding in the Navy's aircraft procurement account is scheduled to grow from \$10.0 billion to \$15.7 billion over the next five years (see Table 7). In real terms, funding for the account is lower in 1988 and 1989 than it was in 1987. Nonetheless, between 1987 and 1992, real growth in the Navy's aircraft procurement account is currently projected to average 7 percent a year over the next five years. As Table 7 shows, real growth is particularly high in 1990. Much of this growth stems from the addition of funding for the

new V-22 tilt-rotor aircraft and the restarting of procurement of a long-range ASW aircraft.

The Navy will have difficulty financing this plan. Without changes in its own budget priorities, achieving this plan means the Navy would have to receive a growing share of the total DoD budget. The Administration's plans call for average annual real growth of 3 percent in the DoD budget over the next five years, while the latest Congressional budget resolution calls for annual real reductions averaging as much as 2.4 percent over the three years covered by the resolution (1988-1990). Increasing the Navy's share may be difficult, however, since the Navy has not received a higher percentage of the budget than its current share--about 34 percent--since at least 1951.

TABLE 7. FIVE-YEAR PROCUREMENT COSTS FOR NAVY AIRCRAFT, FISCAL YEARS 1988-1992 (In billions of dollars)

	1987 Actual	Current Five-Year Plan					Total (1988- 1992)	Average Annual Real Growth 1987-1992 (In percents)
		1988	1989	1990	1991	1992		
Combat Aircraft <sup>a/</sup>								
Current dollars	5.9	6.4	6.9	8.4	9.4	10.3	41.5	
Constant 1988 dollars	6.1	6.4	6.7	7.9	8.7	9.3	39.1	9
Total Aircraft								
Current dollars	10.0	9.9	10.3	12.5	13.6	15.7	62.0	
Constant 1988 dollars	10.3	9.9	9.9	11.8	12.6	14.1	58.4	7
Real Growth Over Preceding Year (In percents)								
	-1	-4	0	19	6	13	n.a.	n.a.

SOURCE: Congressional Budget Office estimates from the Department of the Navy.

NOTE: n.a. = not applicable.

- a. Includes funding for F-14D modifications but excludes funding for other aircraft modifications, spares and repair parts, aircraft support equipment, and facilities.

Moreover, DoD has stated that strategic nuclear forces have the highest budget priority and might therefore be assumed to absorb a larger share of funds if budgets are cut.

The Navy could also accommodate growth in aircraft costs by reallocating funds within its own budget, allowing more growth for aircraft and less for other activities such as operating costs, research, or ship construction. And it may indeed be reasonable to assume that the aircraft share of the Navy's budget will grow, since it is substantially below shares that it has had in the past. In fact, funding for aircraft procurement as a percentage of the total Navy budget has declined every year since 1982.

On the other hand, the aircraft account would have to increase its share at the expense of other Navy programs that may also need to grow. For example, the Navy's shipbuilding plan calls for substantial real growth to sustain the 600-ship Navy with technically advanced ships. Furthermore, the Navy's operating budget may not be able to reduce its budget share. Preliminary results of a CBO study on DoD's operating and support costs indicate a historical link between the value of capital stock and the costs to operate that stock. The Navy's capital stock is scheduled to grow by 3 percent per year through 1992, indicating some pressure for increases rather than decreases in funds to operate the Navy.

Clearly, the Navy will have difficulty funding its aircraft plan given the current fiscal outlook for defense spending. That task assumes Herculean proportions if the Navy decides it needs to meet the aircraft shortfalls identified above. Meeting the 1994 shortfall of 176 aircraft discussed above could add a total of \$7 billion to aircraft procurement costs over the next five years. Assuming that those added costs were spread evenly over the next five years, annual real growth in Navy aircraft procurement costs would amount to 8.5 percent a year rather than 7 percent under the Administration's plans. If current retirement plans prove overly optimistic, and the Navy reverts to the service life estimates in its own planning documents, then the shortfall would grow to 592 aircraft. The costs to meet such a shortfall would total \$24.9 billion. It would probably be infeasible to procure enough extra aircraft over the next five years to meet such a large shortfall. But, to place these added costs in context,

